SEQUENCE LISTING

<110> Bristol-Myers Squibb Company

<120> IDENTIFICATION AND MODULATION OF A G-PROTEIN COUPLED RECEPTOR (GPCR), RAI3, ASSOCIATED WITH CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) AND NF-kB AND E-SELECTIN REGULATION

<130> D0251 NP

<150> U.S. 60/390,850
<151> 2002-06-20

<150> U.S.60/407,006
<151> 2002-08-29

<160> 98

<170> PatentIn version 3.2

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Tyr Tyr Arg Leu Cys Asp Lys Ala Glu Ala Trp Gly Ile Val Leu Glu
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Thr Val Ala Thr Ala Gly Val Val Thr Ser Val Ala Phe Met Leu Thr
35 40 45

Leu Pro Ile Leu Val Cys Lys Val Gln Asp Ser Asn Arg Arg Lys Met
50 55 60

Leu Pro Thr Gln Phe Leu Phe Leu Leu Gly Val Leu Gly Ile Phe Gly
65 70 75 80

Leu Thr Phe Ala Phe Ile Ile Gly Leu Asp Gly Ser Thr Gly Pro Thr
85 90 95

Arg Phe Phe Leu Phe Gly Ile Leu Phe Ser Ile Cys Phe Ser Cys Leu
100 105 110

Leu Ala His Ala Val Ser Leu Thr Lys Leu Val Arg Gly Arg Lys Pro
115 120 125

Leu Ser Leu Leu Val Ile Leu Gly Leu Ala Val Gly Phe Ser Leu Val
130 135 140

Gln Asp Val Ile Ala Ile Glu Tyr Ile Val Leu Thr Met Asn Arg Thr
145 150 155 160

Asn Val Asn Val Phe Ser Glu Leu Ser Ala Pro Arg Arg Asn Glu Asp
165 170 175

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Phe Val Leu Leu Leu Thr Tyr Val Leu Phe Leu Met Ala Leu Thr Phe
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Leu Met Ser Ser Phe Thr Phe Cys Gly Ser Phe Thr Gly Trp Lys Arg
        195                 200                 205

His Gly Ala His Ile Tyr Leu Thr Met Leu Leu Ser Ile Ala Ile Trp
    210                 215                 220

Val Ala Trp Ile Thr Leu Leu Met Leu Pro Asp Phe Asp Arg Arg Trp
225                 230                 235                 240

Asp Asp Thr Ile Leu Ser Ser Ala Leu Ala Ala Asn Gly Trp Val Phe
                245                 250                 255

Leu Leu Ala Tyr Val Ser Pro Glu Phe Trp Leu Leu Thr Lys Gln Arg
            260                 265                 270

Asn Pro Met Asp Tyr Pro Val Glu Asp Ala Phe Cys Lys Pro Gln Leu
        275                 280                 285

Val Lys Lys Ser Tyr Gly Val Glu Asn Arg Ala Tyr Ser Gln Glu Glu
    290                 295                 300

Ile Thr Gln Gly Phe Glu Glu Thr Gly Asp Thr Leu Tyr Ala Pro Tyr
305                 310                 315                 320

Ser Thr His Phe Gln Leu Gln Asn Gln Pro Pro Gln Lys Glu Phe Ser
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Ile Pro Arg Ala His Ala Trp Pro Ser Pro Tyr Lys Asp Tyr Glu Val
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Lys Lys Glu Gly Ser
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<210> 4
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1               5                   10                  15
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Asp Ala Glu Gly Pro Trp Gly Ile Ile Leu Glu Ser Leu Ala Ile Leu
            20                  25                  30

Gly Ile Val Val Thr Ile Leu Leu Leu Leu Ala Phe Leu Phe Leu Met
        35                  40                  45

Arg Lys Ile Gln Asp Cys Ser Gln Trp Asn Val Leu Pro Thr Gln Leu
    50                  55                  60

Leu Phe Leu Leu Ser Val Leu Gly Leu Phe Gly Leu Ala Phe Ala Phe
65                  70                  75                  80

Ile Ile Glu Leu Asn Gln Gln Thr Ala Pro Val Arg Tyr Phe Leu Phe
                85                  90                  95

Gly Val Leu Phe Ala Leu Cys Phe Ser Cys Leu Leu Ala His Ala Ser
            100                 105                 110

Asn Leu Val Lys Leu Val Arg Gly Cys Val Ser Phe Ser Trp Thr Thr
        115                 120                 125

Ile Leu Cys Ile Ala Ile Gly Cys Ser Leu Leu Gln Ile Ile Ile Ala
    130                 135                 140

Thr Glu Tyr Val Thr Leu Ile Met Thr Arg Gly Met Met Phe Val Asn
145                 150                 155                 160

Met Thr Pro Cys Gln Leu Asn Val Asp Phe Val Val Leu Leu Val Tyr
                165                 170                 175

Val Leu Phe Leu Met Ala Leu Thr Phe Phe Val Ser Lys Ala Thr Phe
            180                 185                 190

Cys Gly Pro Cys Glu Asn Trp Lys Gln His Gly Arg Leu Ile Phe Ile
        195                 200                 205

Thr Val Leu Phe Ser Ile Ile Ile Trp Val Val Trp Ile Ser Met Leu
    210                 215                 220

Leu Arg Gly Asn Pro Gln Phe Gln Arg Gln Pro Gln Trp Asp Asp Pro
225                 230                 235                 240
```

```
Val Val Cys Ile Ala Leu Val Thr Asn Ala Trp Val Phe Leu Leu Leu
                245                 250                 255

Tyr Ile Val Pro Glu Leu Cys Ile Leu Tyr Arg Ser Cys Arg Gln Glu
            260                 265                 270

Cys Pro Leu Gln Gly Asn Ala Cys Pro Val Thr Ala Tyr Gln His Ser
        275                 280                 285

Phe Gln Val Glu Asn Gln Glu Leu Ser Arg Ala Arg Asp Ser Asp Gly
    290                 295                 300

Ala Glu Glu Asp Val Ala Leu Thr Ser Tyr Gly Thr Pro Ile Gln Pro
305                 310                 315                 320

Gln Thr Val Asp Pro Thr Gln Glu Cys Phe Ile Pro Gln Ala Lys Leu
                325                 330                 335

Ser Pro Gln Gln Asp Ala Gly Gly Val
            340                 345
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<210> 5
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<213> Mus musculus

<400> 5

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Met Tyr Glu Asp Cys Val Lys Ser Thr Glu Asp Tyr Tyr Leu Phe Cys
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Asp Asn Glu Gly Pro Trp Ala Ile Val Leu Glu Ser Leu Ala Val Ile
            20                  25                  30

Gly Ile Val Val Thr Ile Leu Leu Leu Leu Ala Phe Leu Phe Leu Met
        35                  40                  45

Arg Lys Val Gln Asp Cys Ser Gln Trp Asn Val Leu Pro Thr Gln Phe
    50                  55                  60

Leu Phe Leu Leu Ala Val Leu Gly Leu Phe Gly Leu Thr Phe Ala Phe
65                  70                  75                  80

Ile Ile Gln Leu Asn His Gln Thr Ala Pro Val Arg Tyr Phe Leu Phe
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```
                85                  90                  95

Gly Val Leu Phe Ala Ile Cys Phe Ser Cys Leu Leu Ala His Ala Ser
            100                 105                 110

Asn Leu Val Lys Leu Val Arg Gly Arg Val Ser Phe Cys Trp Thr Thr
        115                 120                 125

Ile Leu Phe Ile Ala Ile Gly Val Ser Leu Leu Gln Thr Ile Ile Ala
    130                 135                 140

Ile Glu Tyr Val Thr Leu Ile Met Thr Arg Gly Leu Met Phe Glu His
145                 150                 155                 160

Met Thr Pro Tyr Gln Leu Asn Val Asp Phe Val Cys Leu Leu Ile Tyr
                165                 170                 175

Val Leu Phe Leu Met Ala Leu Thr Phe Phe Val Ser Lys Ala Thr Phe
            180                 185                 190

Cys Gly Pro Cys Glu Asn Trp Lys Gln His Gly Arg Leu Ile Phe Ala
        195                 200                 205

Thr Val Leu Val Ser Ile Ile Ile Trp Val Val Trp Ile Ser Met Leu
    210                 215                 220

Leu Arg Gly Asn Pro Gln Leu Gln Arg Gln Pro His Trp Asp Asp Ala
225                 230                 235                 240

Val Ile Cys Ile Gly Leu Val Thr Asn Ala Trp Val Phe Leu Leu Ile
                245                 250                 255

Tyr Ile Ile Pro Glu Leu Ser Ile Leu Tyr Arg Ser Cys Arg Gln Glu
            260                 265                 270

Cys Pro Thr Gln Gly Asn Val Cys Gln Val Pro Val Tyr Gln Arg Ser
        275                 280                 285

Phe Arg Met Asp Thr Gln Glu Pro Thr Arg Glu Cys
    290                 295                 300
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<210> 6
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<212> PRT
<213> Homo sapiens

<400> 6

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Met Phe Val Ala Ser Glu Arg Lys Met Arg Ala His Gln Val Leu Thr
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Phe Leu Leu Leu Phe Val Ile Thr Ser Val Ala Ser Glu Asn Ala Ser
            20                  25                  30

Thr Ser Arg Gly Cys Gly Leu Asp Leu Leu Pro Gln Tyr Val Ser Leu
        35                  40                  45

Cys Asp Leu Asp Ala Ile Trp Gly Ile Val Val Glu Ala Val Ala Gly
    50                  55                  60

Ala Gly Ala Leu Ile Thr Leu Leu Leu Met Leu Ile Leu Leu Val Arg
65                  70                  75                  80

Leu Pro Phe Ile Lys Glu Lys Glu Lys Lys Ser Pro Val Gly Leu His
                85                  90                  95

Phe Leu Phe Leu Leu Gly Thr Leu Gly Leu Phe Gly Leu Thr Phe Ala
            100                 105                 110

Phe Ile Ile Gln Glu Asp Glu Thr Ile Cys Ser Val Arg Arg Phe Leu
        115                 120                 125

Trp Gly Val Leu Phe Ala Leu Cys Phe Ser Cys Leu Leu Ser Gln Ala
    130                 135                 140

Trp Arg Val Arg Arg Leu Val Arg His Gly Thr Gly Pro Ala Gly Trp
145                 150                 155                 160

Gln Leu Val Gly Leu Ala Leu Cys Leu Met Leu Val Gln Val Ile Ile
                165                 170                 175

Ala Val Glu Trp Leu Val Leu Thr Val Leu Arg Asp Thr Arg Pro Ala
            180                 185                 190

Cys Ala Tyr Glu Pro Met Asp Phe Val Met Ala Leu Ile Tyr Asp Met
        195                 200                 205
```

```
Val Leu Leu Val Val Thr Leu Gly Leu Ala Leu Phe Thr Leu Cys Gly
    210                 215                 220

Lys Phe Lys Arg Trp Lys Leu Asn Gly Ala Phe Leu Leu Ile Thr Ala
225                 230                 235                 240

Phe Leu Ser Val Leu Ile Trp Val Ala Trp Met Thr Met Tyr Leu Phe
                245                 250                 255

Gly Asn Val Lys Leu Gln Gln Gly Asp Ala Trp Asn Asp Pro Thr Leu
            260                 265                 270

Ala Ile Thr Leu Ala Ala Ser Gly Trp Val Phe Val Ile Phe His Ala
        275                 280                 285

Ile Pro Glu Ile His Cys Thr Leu Leu Pro Ala Leu Gln Glu Asn Thr
    290                 295                 300

Pro Asn Tyr Phe Asp Thr Ser Gln Pro Arg Met Arg Glu Thr Ala Phe
305                 310                 315                 320

Glu Glu Asp Val Gln Leu Pro Arg Ala Tyr Met Glu Asn Lys Ala Phe
                325                 330                 335

Ser Met Asp Glu His Asn Ala Ala Leu Arg Thr Ala Gly Phe Pro Asn
            340                 345                 350

Gly Ser Leu Gly Lys Arg Pro Ser Gly Ser Leu Gly Lys Arg Pro Ser
        355                 360                 365

Ala Pro Phe Arg Ser Asn Val Tyr Gln Pro Thr Glu Met Ala Val Val
    370                 375                 380

Leu Asn Gly Gly Thr Ile Pro Thr Ala Pro Pro Ser His Thr Gly Arg
385                 390                 395                 400

His Leu Trp
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<210> 7
<211> 498
<212> PRT
<213> Homo sapiens

<400> 7

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Met Phe Val Ala Ser Glu Arg Lys Met Arg Ala His Gln Val Leu Thr
1               5                  10                  15

Phe Leu Leu Leu Phe Val Ile Thr Ser Val Ala Ser Glu Asn Ala Ser
            20                  25                  30

Thr Ser Arg Gly Cys Gly Leu Asp Leu Leu Pro Gln Tyr Val Ser Leu
        35                  40                  45

Cys Asp Leu Asp Ala Ile Trp Gly Ile Met Ala Ile His Lys Ala Leu
    50                  55                  60

Val Met Cys Leu Gly Leu Pro Leu Phe Leu Phe Pro Gly Ala Trp Ala
65                  70                  75                  80

Gln Gly His Val Pro Pro Gly Cys Ser Gln Gly Leu Asn Pro Leu Tyr
                85                  90                  95

Tyr Asn Leu Cys Asp Arg Ser Gly Ala Trp Gly Ile Val Leu Glu Ala
            100                 105                 110

Val Ala Gly Ala Gly Ile Val Thr Thr Phe Val Leu Thr Ile Ile Leu
        115                 120                 125

Val Ala Ser Leu Pro Phe Val Gln Asp Thr Lys Lys Arg Ser Leu Leu
    130                 135                 140

Gly Thr Gln Val Phe Phe Leu Leu Gly Thr Leu Gly Leu Phe Cys Leu
145                 150                 155                 160

Val Phe Ala Cys Val Val Lys Pro Asp Phe Ser Thr Cys Ala Ser Arg
                165                 170                 175

Arg Phe Leu Phe Gly Val Leu Phe Ala Ile Cys Phe Ser Cys Leu Ala
            180                 185                 190

Ala His Val Phe Ala Leu Asn Phe Leu Ala Arg Lys Asn His Gly Pro
        195                 200                 205

Arg Gly Trp Val Ile Phe Thr Val Ala Leu Leu Leu Thr Leu Val Glu
    210                 215                 220
```

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Val Ile Ile Asn Thr Glu Trp Leu Ile Ile Thr Leu Val Arg Gly Ser
225                 230                 235                 240

Gly Glu Gly Gly Pro Gln Gly Asn Ser Ser Ala Gly Trp Ala Val Ala
                245                 250                 255

Ser Pro Cys Ala Val Ala Asn Met Asp Phe Val Met Ala Leu Ile Tyr
            260                 265                 270

Val Met Leu Leu Leu Leu Gly Ala Phe Leu Gly Ala Trp Pro Ala Leu
        275                 280                 285

Cys Gly Arg Tyr Lys Arg Trp Arg Lys His Gly Val Phe Val Leu Leu
    290                 295                 300

Thr Thr Ala Thr Ser Val Ala Ile Trp Val Val Trp Ile Val Met Tyr
305                 310                 315                 320

Thr Tyr Gly Asn Lys Gln His Asn Ser Pro Thr Trp Asp Asp Pro Thr
                325                 330                 335

Leu Ala Ile Ala Leu Ala Ala Asn Ala Trp Ala Phe Val Leu Phe Tyr
            340                 345                 350

Val Ile Pro Glu Val Ser Gln Val Thr Lys Ser Ser Pro Glu Gln Ser
        355                 360                 365

Tyr Gln Gly Asp Met Tyr Pro Thr Arg Gly Val Gly Tyr Glu Thr Ile
    370                 375                 380

Leu Lys Glu Gln Lys Gly Gln Ser Met Phe Val Glu Asn Lys Ala Phe
385                 390                 395                 400

Ser Met Asp Glu Pro Val Ala Ala Lys Arg Pro Val Ser Pro Tyr Ser
                405                 410                 415

Gly Tyr Asn Gly Gln Leu Leu Thr Ser Val Tyr Gln Pro Thr Glu Met
            420                 425                 430

Ala Leu Met His Lys Val Pro Ser Glu Gly Ala Tyr Asp Ile Ile Leu
        435                 440                 445
```

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Pro Arg Ala Thr Ala Asn Ser Gln Val Met Gly Ser Ala Asn Ser Thr
    450                 455                 460

Leu Arg Ala Glu Asp Met Tyr Ser Ala Gln Ser His Gln Ala Ala Thr
465                 470                 475                 480

Pro Pro Lys Asp Gly Lys Asn Ser Gln Val Phe Arg Asn Pro Tyr Val
                485                 490                 495

Trp Asp
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<210> 8
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<212> PRT
<213> Homo sapiens

<400> 8

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Tyr Tyr Arg Leu Cys Asp Lys Ala Glu Ala Trp Gly Ile Val Leu Glu
            20                  25                  30

Thr Val Ala Thr Ala Gly Val Val Thr Ser Val Ala Phe Met Leu Thr
        35                  40                  45

Leu Pro Ile Leu Val Cys Lys Val Gln Asp Ser Asn Arg Arg Lys Met
    50                  55                  60

Leu Pro Thr Gln Phe Leu Phe Leu Leu Gly Val Leu Gly Ile Phe Gly
65                  70                  75                  80

Leu Thr Phe Ala Phe Ile Ile Gly Leu Asp Gly Ser Thr Gly Pro Thr
                85                  90                  95

Arg Phe Phe Leu Phe Gly Ile Leu Phe Ser Ile Cys Phe Ser Cys Leu
            100                 105                 110

Leu Ala His Ala Val Gly Leu Thr Lys Leu Val Arg Gly Arg Lys Pro
        115                 120                 125

Leu Ser Leu Leu Val Ile Leu Gly Leu Ala Val Gly Phe Ser Leu Val
    130                 135                 140
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```
Gln Asp Val Ile Ala Ile Glu Tyr Ile Val Leu Thr Met Asn Arg Thr
145                 150                 155                 160

Asn Val Asn Val Phe Ser Glu Leu Ser Ala Pro Arg Arg Asn Glu Asp
                165                 170                 175

Phe Val Leu Leu Leu Thr Tyr Val Leu Phe Leu Met Ala Leu Thr Phe
            180                 185                 190

Leu Met Ser Ser Phe Thr Phe Cys Gly Ser Phe Thr Gly Trp Lys Arg
        195                 200                 205

His Gly Ala His Ile Tyr Leu Thr Met Leu Leu Ser Ile Ala Ile Trp
    210                 215                 220

Val Ala Trp Ile Thr Leu Leu Met Leu Pro Asp Phe Asp Arg Arg Trp
225                 230                 235                 240

Asp Asp Thr Ile Leu Ser Ser Ala Leu Ala Ala Asn Gly Trp Val Phe
                245                 250                 255

Leu Leu Ala Tyr Val Ser Pro Glu Phe Trp Leu Leu Thr Lys Gln Arg
            260                 265                 270

Asn Pro Met Asp Tyr Pro Val Glu Asp Ala Phe Cys Lys Pro Gln Leu
        275                 280                 285

Val Lys Lys Ser Tyr Gly Val Glu Asn Arg Ala Tyr Ser Gln Glu Glu
    290                 295                 300

Ile Thr Gln Gly Phe Glu Glu Thr Gly Asp Thr Leu Tyr Ala Pro Tyr
305                 310                 315                 320

Ser Thr His Phe Gln Leu Gln Asn Gln Pro Pro Gln Lys Glu Phe Ser
                325                 330                 335

Ile Pro Arg Ala His Ala Trp Pro Ser Pro Tyr Lys Asp Tyr Glu Val
            340                 345                 350

Lys Lys Glu Gly Ser
        355
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<210> 9
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<212> PRT
<213> Homo sapiens

<400> 9

Met Ala Thr Thr Val Pro Asp Gly Cys Arg Asn Gly Leu Lys Ser Lys
1 5 10 15

Tyr Tyr Arg Leu Cys Asp Lys Ala Glu Ala Trp Gly Ile Val Leu Glu
20 25 30

Thr Val Ala Thr Ala Gly Val Val Thr Ser Val Ala Phe Met Leu Thr
35 40 45

Leu Pro Ile Leu Val Cys Lys Val Gln Asp Ser Asn Arg Arg Lys Met
50 55 60

Leu Pro Thr Gln Phe Leu Phe Leu Leu Gly Val Leu Gly Ile Phe Gly
65 70 75 80

Leu Thr Phe Ala Phe Ile Ile Gly Leu Asp Gly Ser Thr Gly Pro Thr
85 90 95

Arg Phe Phe Leu Phe Gly Ile Leu Phe Ser Ile Cys Phe Ser Cys Leu
100 105 110

Leu Ala His Ala Val Ser Leu Thr Lys Leu Val Arg Gly Arg Lys Pro
115 120 125

Leu Ser Leu Leu Val Ile Leu Gly Leu Ala Val Gly Phe Ser Leu Val
130 135 140

Gln Asp Val Ile Ala Ile Glu Tyr Ile Val Leu Thr Met Asn Arg Thr
145 150 155 160

Asn Val Asn Val Phe Ser Glu Leu Ser Ala Pro Arg Arg Asn Glu Asp
165 170 175

Phe Val Leu Leu Leu Thr Tyr Val Leu Phe Leu Met Ala Leu Thr Phe
180 185 190

Leu Met Ser Ser Phe Thr Phe Cys Gly Ser Phe Thr Gly Trp Lys Arg

```
        195                 200                 205

His Gly Ala His Ile Tyr Leu Thr Met Leu Leu Ser Ile Ala Ile Trp
    210                 215                 220

Val Ala Trp Ile Thr Leu Leu Met Leu Pro Asp Phe Asp Arg Arg Trp
225                 230                 235                 240

Asp Asp Thr Ile Leu Ser Ser Ala Leu Ala Ala Asn Gly Trp Val Phe
                245                 250                 255

Leu Leu Ala Tyr Val Ser Pro Glu Phe Trp Leu Leu Thr Lys Gln Arg
            260                 265                 270

Asn Pro Met Asp Tyr Pro Val Glu Asp Ala Phe Cys Lys Pro Gln Leu
        275                 280                 285

Val Lys Lys Ser Tyr Gly Val Glu Asn Arg Ala Tyr Ser Gln Glu Glu
    290                 295                 300

Ile Thr Arg Gly Phe Glu Glu Thr Gly Asp Thr Leu Tyr Ala Pro Tyr
305                 310                 315                 320

Ser Thr His Phe Gln Leu Gln Asn Gln Pro Pro Gln Lys Glu Phe Ser
                325                 330                 335

Ile Pro Arg Ala His Ala Trp Pro Ser Pro Tyr Lys Asp Tyr Glu Val
            340                 345                 350

Lys Lys Glu Gly Ser
        355
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<210> 10
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<212> PRT
<213> Mus musculus

<400> 10

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Asp Gly Ala Thr Gly Pro Thr Arg Phe Phe Leu Phe Gly Val Leu Phe
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Ala Ile Cys Phe Ser Cys Leu Leu Ala His Ala Phe Asn Leu Ile Lys
            20                  25                  30
```

```
Leu Val Arg Gly Arg Lys Pro Leu Ser Trp Leu Val Ile Leu Ser Leu
        35                  40                  45

\
Ala Val Gly Phe Ser Leu Val Gln Asp Val Ile
    50                  55


<210>  11
<211>  59
<212>  PRT
<213>  Rattus norvetigus

<400>  11

Asp Arg Ala Thr Gly Pro Thr Arg Phe Phe Leu Phe Gly Val Leu Phe
1               5                   10                  15


Ala Leu Cys Phe Ser Cys Leu Leu Ala His Ala Phe Asn Leu Ile Lys
            20                  25                  30


Leu Val Arg Gly Arg Lys Pro Leu Ser Trp Leu Val Ile Leu Ser Leu
        35                  40                  45


Ala Val Gly Phe Ser Leu Val Gln Asp Val Ile
    50                  55


<210>  12
<211>  59
<212>  PRT
<213>  Bos taurus

<400>  12

Asn Gly Gly Thr Gly Pro Thr Arg Phe Phe Leu Phe Gly Val Leu Phe
1               5                   10                  15


Ala Leu Cys Phe Ser Cys Leu Leu Val His Ala Phe Asn Leu Thr Lys
            20                  25                  30


Leu Val Arg Gly Arg Gln Pro Leu Ser Met Leu Val Met Leu Gly Leu
        35                  40                  45


Ala Leu Gly Phe Ser Leu Val Gln Asp Ile Ile
    50                  55


<210>  13
<211>  59
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<212> PRT
<213> Homo sapiens

<400> 13

Asp Gly Ser Thr Gly Pro Thr Arg Phe Phe Leu Phe Gly Ile Leu Phe
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Ser Ile Cys Phe Ser Cys Leu Leu Ala His Ala Val Gly Leu Thr Lys
20 25 30

Leu Val Arg Gly Arg Lys Pro Leu Ser Leu Leu Val Ile Leu Gly Leu
35 40 45

Ala Val Gly Phe Ser Leu Val Gln Asp Val Ile
50 55

<210> 14
<211> 54
<212> PRT
<213> Homo sapiens

<400> 14

Glu Ile Thr Gln Gly Phe Glu Glu Thr Gly Asp Thr Leu Tyr Ala Pro
1 5 10 15

Tyr Ser Thr His Phe Gln Leu Gln Asn Gln Pro Pro Gln Lys Glu Phe
20 25 30

Ser Ile Pro Arg Ala His Ala Trp Pro Ser Pro Tyr Lys Asp Tyr Glu
35 40 45

Val Lys Lys Glu Gly Ser
50

<210> 15
<211> 54
<212> PRT
<213> Homo sapiens

<400> 15

Glu Ile Thr Arg Gly Phe Glu Glu Thr Gly Asp Thr Leu Tyr Ala Pro
1 5 10 15

Tyr Ser Thr His Phe Gln Leu Gln Asn Gln Pro Pro Gln Lys Glu Phe
20 25 30

Ser Ile Pro Arg Ala His Ala Trp Pro Ser Pro Tyr Lys Asp Tyr Glu
35 40 45

Val Lys Lys Glu Gly Ser
50

<210> 16
<211> 51
<212> PRT
<213> Mus musculus

<400> 16

Glu Ile Thr Gln Gly Leu Glu Met Gly Asp Thr Leu Tyr Ala Pro Tyr
1 5 10 15

Ser Thr His Phe Gln Leu Gln Asn His Gln Lys Asp Phe Ser Ile Pro
20 25 30

Arg Ala Gln Ala Pro Ala Ser Pro Tyr Asn Asp Tyr Glu Gly Arg Lys
35 40 45

Gly Asp Ser
50

<210> 17
<211> 357
<212> PRT
<213> Homo sapiens

<400> 17

Met Ala Thr Thr Val Pro Asp Gly Cys Arg Asn Gly Leu Lys Ser Lys
1 5 10 15

Tyr Tyr Arg Leu Cys Asp Lys Ala Glu Ala Trp Gly Ile Val Leu Glu
20 25 30

Thr Val Ala Thr Ala Gly Val Val Thr Ser Val Ala Phe Met Leu Thr
35 40 45

Leu Pro Ile Leu Val Cys Lys Val Gln Asp Ser Asn Arg Arg Lys Met
50 55 60

Leu Pro Thr Gln Phe Leu Phe Leu Leu Gly Val Leu Gly Ile Phe Gly

65 70 75 80

Leu Thr Phe Ala Phe Ile Ile Gly Leu Asp Gly Ser Thr Gly Pro Thr
85 90 95

Arg Phe Phe Leu Phe Gly Ile Leu Phe Ser Ile Cys Phe Ser Cys Leu
100 105 110

Leu Ala His Ala Val Ser Leu Thr Lys Leu Val Arg Gly Arg Lys Pro
115 120 125

Leu Ser Leu Leu Val Ile Leu Gly Leu Ala Val Gly Phe Ser Leu Val
130 135 140

Gln Asp Val Ile Ala Ile Glu Tyr Ile Val Leu Thr Met Asn Arg Thr
145 150 155 160

Asn Val Asn Val Phe Ser Glu Leu Ser Ala Pro Arg Arg Asn Glu Asp
165 170 175

Phe Val Leu Leu Leu Ala Tyr Val Leu Phe Leu Met Ala Leu Thr Phe
180 185 190

Leu Met Ser Ser Phe Thr Phe Cys Gly Ser Phe Thr Gly Trp Lys Arg
195 200 205

His Gly Ala His Ile Tyr Leu Thr Met Leu Leu Ser Ile Ala Ile Trp
210 215 220

Val Ala Trp Ile Thr Leu Leu Met Leu Pro Asp Phe Asp Arg Arg Trp
225 230 235 240

Asp Asp Thr Ile Leu Ser Ser Ala Leu Ala Ala Asn Gly Trp Val Phe
245 250 255

Leu Leu Ala Tyr Val Ser Pro Glu Phe Trp Leu Leu Thr Lys Gln Arg
260 265 270

Asn Pro Met Asp Tyr Pro Val Glu Asp Ala Phe Cys Lys Pro Gln Leu
275 280 285

Val Lys Lys Ser Tyr Gly Val Glu Asn Arg Ala Tyr Ser Gln Glu Glu
290 295 300

Ile Thr Gln Gly Phe Glu Glu Thr Gly Asp Thr Leu Tyr Ala Pro Tyr
305 310 315 320

Ser Thr His Phe Gln Leu Gln Asn Gln Pro Pro Gln Lys Glu Phe Ser
325 330 335

Ile Pro Arg Ala His Ala Trp Pro Ser Pro Tyr Lys Asp Tyr Glu Val
340 345 350

Lys Lys Glu Gly Ser
355

<210> 18
<211> 2456
<212> DNA
<213> Artificial Sequence

<220>
<223> RAI3 Polymorphic Allele Summary Sequence.

<220>
<221> misc_feature
<222> (112)..(112)
<223> wherein "n" equals either G or A.

<220>
<221> misc_feature
<222> (364)..(364)
<223> wherein "n" equals either C or T.

<220>
<221> misc_feature
<222> (511)..(511)
<223> wherein "n" equals either C or T.

<220>
<221> misc_feature
<222> (523)..(523)
<223> wherein "n" equals either C or T.

<220>
<221> misc_feature
<222> (605)..(605)
<223> wherein "n" equals either A or G.

<220>
<221> misc_feature
<222> (797)..(797)
<223> wherein "n" equals either A or G.

<220>
<221> misc_feature
<222> (1111)..(1111)
<223> wherein "n" equals either T or C.

<220>
<221> misc_feature
<222> (1173)..(1173)
<223> wherein "n" equals either A or G.

<400> 18
ataacagcat gaagtgccgt ggaactggaa taggcgtgtc ctctccctcg accctccccc 60

tccttgtccc tctgctcacc cctcgctcgt tccctccctc cggcgagggc cncctttata 120

acaactgctc agagtgcgag ggcgggatag ctgtccaagg tctcccccag cactgaggag 180

ctcgcctgct gccctcttgc gcgcgggaag cagcaccaag ttcacggcca acgccttggc 240

actagggtcc agaatggcta caacagtccc tgatggttgc cgcaatggcc tgaaatccaa 300

gtactacaga ctttgtgata aggctgaagc ttggggcatc gtcctagaaa cggtggccac 360

agcnggggtt gtgacctcgg tggccttcat gctcactctc ccgatcctcg tctgcaaggt 420

gcaggactcc aacaggcgaa aaatgctgcc tactcagttt ctcttcctcc tgggtgtgtt 480

gggcatcttt ggcctcacct tcgccttcat natcggactg gangggagca cagggcccac 540

acgcttcttc ctctttggga tcctcttttc catctgcttc tcctgcctgc tggctcatgc 600

tgtcngtctg accaagctcg tccgggggag gaagcccctt tccctgttgg tgattctggg 660

tctggccgtg ggcttcagcc tagtccagga tgttatcgct attgaatata ttgtcctgac 720

catgaatagg accaacgtca atgtcttttc tgagctttcc gctcctcgtc gcaatgaaga 780

ctttgtcctc ctgctcncct acgtcctctt cttgatggcg ctgaccttcc tcatgtcctc 840

cttcaccttc tgtggttcct tcacgggctg gaagagacat ggggcccaca tctacctcac 900

gatgctcctc tccattgcca tctgggtggc ctggatcacc ctgctcatgc ttcctgactt 960

tgaccgcagg tgggatgaca ccatcctcag ctccgccttg gctgccaatg gctgggtgtt 1020

cctgttggct tatgttagtc ccgagttttg gctgctcaca aagcaacgaa accccatgga 1080

ttatcctgtt gaggatgctt tctgtaaacc ncaactcgtg aagaagagct atggtgtgga 1140

gaacagagcc tactctcaag aggaaatcac tcnaggtttt gaagagacag gggacacgct 1200

ctatgccccc tattccacac attttcagct gcagaaccag cctccccaaa aggaattctc 1260

catcccacgg gcccacgctt ggccgagccc ttacaaagac tatgaagtaa agaaagaggg 1320

cagctaactc tgtcctgaag agtgggacaa atgcagccgg gcggcagatc tagcgggagc 1380

tcaaagggat gtgggcgaaa tcttgagtct tctgagaaaa ctgtacaaga cactacggga 1440

acagtttgcc tccctcccag cctcaaccac aattcttcca tgctggggct gatgtgggct 1500

agtaagactc cagttcttag aggcgctgta gtatttttt ttttttgtct catcctttgg 1560

atacttcttt taagtgggag tctcaggcaa ctcaagttta gacccttact ctttttgttt 1620

gttttttgaa acaggatctt gctctgtcac ccaggcttga gtgcagtggt gcgatcacag 1680

cccagtgcag cctcgaccac ctgtgctcaa gcaatcctcc catctccatc tcccaaagtg 1740

ctgggatgac aggcgtgagc cacagctccc agcctaggcc cttaatcttg ctgttatttt 1800

ccatggacta aaggtctggt catctgagct cacgctggct cacacagctc taggggcctg 1860

ctcctctaac tcacagtggg ttttgtgagg ctctgtggcc cagagcagac ctgcatatct 1920

gagcaaaaat agcaaaagcc tctctcagcc cactggcctg aatctacact ggaagccaac 1980

ttgctggcac ccccgctccc caacccttct tgcctgggta ggagaggcta aagatcaccc 2040

taaatttact catctctcta gtgctgcctc acattgggcc tcagcagctc cccagcacca 2100

attcacaggt caccctctc ttcttgcact gtccccaaac ttgctgtcaa ttccgagatc 2160

taatctcccc ctacgctctg ccaggaattc tttcagacct cactagcaca agcccggttg 2220

ctccttgtca ggagaatttg tagatcattc tcacttcaaa ttcctggggc tgatacttct 2280

ctcatcttgc accccaacct ctgtaaatag atttaccgca tttacggctg cattctgtaa 2340

gtgggcatgg tctcctaatg gaggagtgtt cattgtataa taagttattc acctgagtat 2400

gcaataaaga tgtggtggcc actctttcat ggtggtggca gcaaaaaaaa aaaaaa 2456

<210> 19
<211> 357
<212> PRT
<213> Artificial Sequence

<220>
<223> RAI3 Polymorphic Allele Summary Sequence.

<220>
<221> MISC_FEATURE
<222> (118)..(118)
<223> wherein "Xaa" equals either 'Ser' or 'Gly'.

<220>
<221> MISC_FEATURE
<222> (182)..(182)
<223> wherein "Xaa" equals either 'Thr' or 'Ala'.

<220>

<221> MISC_FEATURE
<222> (307)..(307)
<223> wherein "Xaa" equals either 'Gln' or 'Arg'.

<400> 19

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Met Ala Thr Thr Val Pro Asp Gly Cys Arg Asn Gly Leu Lys Ser Lys
1               5                  10                  15

Tyr Tyr Arg Leu Cys Asp Lys Ala Glu Ala Trp Gly Ile Val Leu Glu
            20                  25                  30

Thr Val Ala Thr Ala Gly Val Val Thr Ser Val Ala Phe Met Leu Thr
        35                  40                  45

Leu Pro Ile Leu Val Cys Lys Val Gln Asp Ser Asn Arg Arg Lys Met
    50                  55                  60

Leu Pro Thr Gln Phe Leu Phe Leu Leu Gly Val Leu Gly Ile Phe Gly
65                  70                  75                  80

Leu Thr Phe Ala Phe Ile Ile Gly Leu Asp Gly Ser Thr Gly Pro Thr
                85                  90                  95

Arg Phe Phe Leu Phe Gly Ile Leu Phe Ser Ile Cys Phe Ser Cys Leu
            100                 105                 110

Leu Ala His Ala Val Xaa Leu Thr Lys Leu Val Arg Gly Arg Lys Pro
        115                 120                 125

Leu Ser Leu Leu Val Ile Leu Gly Leu Ala Val Gly Phe Ser Leu Val
    130                 135                 140

Gln Asp Val Ile Ala Ile Glu Tyr Ile Val Leu Thr Met Asn Arg Thr
145                 150                 155                 160

Asn Val Asn Val Phe Ser Glu Leu Ser Ala Pro Arg Arg Asn Glu Asp
                165                 170                 175

Phe Val Leu Leu Leu Xaa Tyr Val Leu Phe Leu Met Ala Leu Thr Phe
            180                 185                 190

Leu Met Ser Ser Phe Thr Phe Cys Gly Ser Phe Thr Gly Trp Lys Arg
        195                 200                 205
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His Gly Ala His Ile Tyr Leu Thr Met Leu Leu Ser Ile Ala Ile Trp
    210                 215                 220

Val Ala Trp Ile Thr Leu Leu Met Leu Pro Asp Phe Asp Arg Arg Trp
225                 230                 235                 240

Asp Asp Thr Ile Leu Ser Ser Ala Leu Ala Ala Asn Gly Trp Val Phe
                245                 250                 255

Leu Leu Ala Tyr Val Ser Pro Glu Phe Trp Leu Leu Thr Lys Gln Arg
            260                 265                 270

Asn Pro Met Asp Tyr Pro Val Glu Asp Ala Phe Cys Lys Pro Gln Leu
        275                 280                 285

Val Lys Lys Ser Tyr Gly Val Glu Asn Arg Ala Tyr Ser Gln Glu Glu
    290                 295                 300

Ile Thr Xaa Gly Phe Glu Glu Thr Gly Asp Thr Leu Tyr Ala Pro Tyr
305                 310                 315                 320

Ser Thr His Phe Gln Leu Gln Asn Gln Pro Pro Gln Lys Glu Phe Ser
                325                 330                 335

Ile Pro Arg Ala His Ala Trp Pro Ser Pro Tyr Lys Asp Tyr Glu Val
            340                 345                 350

Lys Lys Glu Gly Ser
        355
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<210> 20
<211> 357
<212> PRT
<213> Homo sapiens

<400> 20

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Met Ala Thr Thr Val Pro Asp Gly Cys Arg Asn Gly Leu Lys Ser Lys
1               5                   10                  15

Tyr Tyr Arg Leu Cys Asp Lys Ala Glu Ala Trp Gly Ile Val Leu Glu
            20                  25                  30

Thr Val Ala Thr Ala Gly Val Val Thr Ser Val Ala Phe Met Leu Thr
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        35                  40                  45

Leu Pro Ile Leu Val Cys Lys Val Gln Asp Ser Asn Arg Arg Lys Met
    50                  55                  60

Leu Pro Thr Gln Phe Leu Phe Leu Leu Gly Val Leu Gly Ile Phe Gly
65                  70                  75                  80

Leu Thr Phe Ala Phe Ile Ile Gly Leu Asp Gly Ser Thr Gly Pro Thr
                85                  90                  95

Arg Phe Phe Leu Phe Gly Ile Leu Phe Ser Ile Cys Phe Ser Cys Leu
            100                 105                 110

Leu Ala His Ala Val Ser Leu Thr Lys Leu Val Arg Gly Arg Lys Pro
        115                 120                 125

Leu Ser Leu Leu Val Ile Leu Gly Leu Ala Val Gly Phe Ser Leu Val
    130                 135                 140

Gln Asp Val Ile Ala Ile Glu Tyr Ile Val Leu Thr Met Asn Arg Thr
145                 150                 155                 160

Asn Val Asn Val Phe Ser Glu Leu Ser Ala Pro Arg Arg Asn Glu Asp
                165                 170                 175

Phe Val Leu Leu Leu Thr Tyr Val Leu Phe Leu Met Ala Leu Thr Phe
            180                 185                 190

Leu Met Ser Ser Phe Thr Phe Cys Gly Ser Phe Thr Gly Trp Lys Arg
        195                 200                 205

His Gly Ala His Ile Tyr Leu Thr Met Leu Leu Ser Ile Ala Ile Trp
    210                 215                 220

Val Ala Trp Ile Thr Leu Leu Met Leu Pro Asp Phe Asp Arg Arg Trp
225                 230                 235                 240

Asp Asp Thr Ile Leu Ser Ser Ala Leu Ala Ala Asn Gly Trp Val Phe
                245                 250                 255

Leu Leu Ala Tyr Val Ser Pro Glu Phe Trp Leu Leu Thr Lys Gln Arg
            260                 265                 270
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Asn Pro Met Asp Tyr Pro Val Glu Asp Ala Phe Cys Lys Pro Gln Leu
        275                 280                 285

Val Lys Lys Ser Tyr Gly Val Glu Asn Arg Ala Tyr Ser Gln Glu Glu
    290                 295                 300

Ile Thr Gln Gly Phe Glu Glu Thr Gly Asp Thr Leu Tyr Ala Pro Tyr
305                 310                 315                 320

Ser Thr His Phe Gln Leu Gln Asn Gln Pro Pro Gln Lys Glu Phe Ser
                325                 330                 335

Ile Pro Arg Ala His Ala Trp Pro Ser Pro Tyr Lys Asp Tyr Glu Val
            340                 345                 350

Lys Lys Glu Gly Ser
        355
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<210> 21
<211> 357
<212> PRT
<213> Homo sapiens

<400> 21

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Met Ala Thr Thr Val Pro Asp Gly Cys Arg Asn Gly Leu Lys Ser Lys
1               5                   10                  15

Tyr Tyr Arg Leu Cys Asp Lys Ala Glu Ala Trp Gly Ile Val Leu Glu
            20                  25                  30

Thr Val Ala Thr Ala Gly Val Val Thr Ser Val Ala Phe Met Leu Thr
        35                  40                  45

Leu Pro Ile Leu Val Cys Lys Val Gln Asp Ser Asn Arg Arg Lys Met
    50                  55                  60

Leu Pro Thr Gln Phe Leu Phe Leu Leu Gly Val Leu Gly Ile Phe Gly
65                  70                  75                  80

Leu Thr Phe Ala Phe Ile Ile Gly Leu Asp Gly Ser Thr Gly Pro Thr
                85                  90                  95
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Arg Phe Phe Leu Phe Gly Ile Leu Phe Ser Ile Cys Phe Ser Cys Leu
            100                 105                 110

Leu Ala His Ala Val Ser Leu Thr Lys Leu Val Arg Gly Arg Lys Pro
        115                 120                 125

Leu Ser Leu Leu Val Ile Leu Gly Leu Ala Val Gly Phe Ser Leu Val
    130                 135                 140

Gln Asp Val Ile Ala Ile Glu Tyr Ile Val Leu Thr Met Asn Arg Thr
145                 150                 155                 160

Asn Val Asn Val Phe Ser Glu Leu Ser Ala Pro Arg Arg Asn Glu Asp
                165                 170                 175

Phe Val Leu Leu Leu Thr Tyr Val Leu Phe Leu Met Ala Leu Thr Phe
            180                 185                 190

Leu Met Ser Ser Phe Thr Phe Cys Gly Ser Phe Thr Gly Trp Lys Arg
        195                 200                 205

His Gly Ala His Ile Tyr Leu Thr Met Leu Leu Ser Ile Ala Ile Trp
    210                 215                 220

Val Ala Trp Ile Thr Leu Leu Met Leu Pro Asp Phe Asp Arg Arg Trp
225                 230                 235                 240

Asp Asp Thr Ile Leu Ser Ser Ala Leu Ala Ala Asn Gly Trp Val Phe
                245                 250                 255

Leu Leu Ala Tyr Val Ser Pro Glu Phe Trp Leu Leu Thr Lys Gln Arg
            260                 265                 270

Asn Pro Met Asp Tyr Pro Val Glu Asp Ala Phe Cys Lys Pro Gln Leu
        275                 280                 285

Val Lys Lys Ser Tyr Gly Val Glu Asn Arg Ala Tyr Ser Gln Glu Glu
    290                 295                 300

Ile Thr Gln Gly Phe Glu Glu Thr Gly Asp Thr Leu Tyr Ala Pro Tyr
305                 310                 315                 320

Ser Thr His Phe Gln Leu Gln Asn Gln Pro Pro Gln Lys Glu Phe Ser
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325 330 335

Ile Pro Arg Ala His Ala Trp Pro Ser Pro Tyr Lys Asp Tyr Glu Val
340 345 350

Lys Lys Glu Gly Ser
355

<210> 22
<211> 40
<212> DNA
<213> Homo sapiens

<400> 22
ctagaaacgg tggccacagc cggggttgtg acctcggtgg 40

<210> 23
<211> 40
<212> DNA
<213> Homo sapiens

<400> 23
ctagaaacgg tggccacagc tggggttgtg acctcggtgg 40

<210> 24
<211> 44
<212> DNA
<213> Homo sapiens

<400> 24
tgcctgctgg ctcatgctgt cagtctgacc aagctcgtcc gggg 44

<210> 25
<211> 44
<212> DNA
<213> Homo sapiens

<400> 25
tgcctgctgg ctcatgctgt cggtctgacc aagctcgtcc gggg 44

<210> 26
<211> 50
<212> DNA
<213> Homo sapiens

<400> 26
tcctgttgag gatgctttct gtaaacctca actcgtgaag aagagctatg 50

<210> 27

<211> 50
<212> DNA
<213> Homo sapiens

<400> 27
tcctgttgag gatgctttct gtaaacccca actcgtgaag aagagctatg 50

<210> 28
<211> 40
<212> DNA
<213> Homo sapiens

<400> 28
tctcaagagg aaatcactca aggttttgaa gagacagggg 40

<210> 29
<211> 40
<212> DNA
<213> Homo sapiens

<400> 29
tctcaagagg aaatcactcg aggttttgaa gagacagggg 40

<210> 30
<211> 42
<212> DNA
<213> Homo sapiens

<400> 30
gcccacgctt ggccgagccc ttacaaagac tatgaagtaa ag 42

<210> 31
<211> 17
<212> DNA
<213> Homo sapiens

<400> 31
gcccacgctt ggccgag 17

<210> 32
<211> 19
<212> DNA
<213> Homo sapiens

<400> 32
ctttacttca tagtctttg 19

<210> 33
<211> 42
<212> DNA
<213> Artificial Sequence

<220>
<223> Degenerate Oligonucleotide.

<220>
<221> misc_feature
<222> (3)..(39)
<223> wherein "n" equals A, C, G, or T.

<220>
<221> misc_feature
<222> (6)..(33)
<223> wherein "y" equals C, or T.

<220>
<221> misc_feature
<222> (27)..(42)
<223> wherein "r" equals A, or G.

<400> 33
gcncaygcnt ggccntcncc ntayaargay taygargtna ar 42

<210> 34
<211> 17
<212> DNA
<213> Artificial Sequence

<220>
<223> Degenerate Oligonucleotide.

<220>
<221> misc_feature
<222> (3)..(15)
<223> wherein "n" equals A, C, G, or T.

<220>
<221> misc_feature
<222> (6)..(6)
<223> wherein "y" equals C, or T.

<400> 34
gcncaygcnt ggccntc 17

<210> 35
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Degenerate Oligonucleotide.

<220>

<221> misc_feature
<222> (1)..(16)
<223> wherein "y" equals C, or T.

<220>
<221> misc_feature
<222> (4)..(22)
<223> wherein "n" equals A, C, G, or T.

<220>
<221> misc_feature
<222> (10)..(19)
<223> wherein "r" equals A, or G.

<400> 35
yttnacytcr tartcyttrt ang 23

<210> 36
<211> 38
<212> DNA
<213> Homo sapiens

<400> 36
gcgcggccca attgcatggc tacaacagtc cctgatgg 38

<210> 37
<211> 33
<212> DNA
<213> Homo sapiens

<400> 37
gcggccctcg agttagctgc cctctttctt tac 33

<210> 38
<211> 16
<212> PRT
<213> Homo sapiens

<400> 38

Met Lys Thr Ile Ile Ala Leu Ser Tyr Ile Phe Cys Leu Val Phe Ala
1 5 10 15

<210> 39
<211> 11
<212> PRT
<213> Bacteriophage T7

<400> 39

Asp Tyr Lys Asp Asp Asp Asp Ala Arg Asn Ser
1 5 10

<210> 40
<211> 27
<212> PRT
<213> Homo sapiens

<400> 40

Met Lys Thr Ile Ile Ala Leu Ser Tyr Ile Phe Cys Leu Val Phe Ala
1 5 10 15

Asp Tyr Lys Asp Asp Asp Asp Ala Arg Asn Ser
20 25

<210> 41
<211> 39
<212> DNA
<213> Homo sapiens

<400> 41
gcggccagat ctgccaccat ggctacaaca gtccctgat 39

<210> 42
<211> 60
<212> DNA
<213> Homo sapiens

<400> 42
gcggccctcg agctacttgt cgtcgtcgtc cttgtagtcc atgctgccct ctttctttac 60

<210> 43
<211> 9
<212> PRT
<213> Homo sapiens

<400> 43

Met Asp Tyr Lys Asp Asp Asp Asp Lys
1 5

<210> 44
<211> 55
<212> DNA
<213> Homo sapiens

<400> 44
cgggatccta cttgtcgtcg tcgtccttgt agtcgctgcc ctctttcttt acttc 55

<210> 45
<211> 21
<212> DNA

<213> Homo sapiens

<400> 45
ccacacattt tcagctgcag a 21

<210> 46
<211> 22
<212> DNA
<213> Homo sapiens

<400> 46
gtgggatgga gaattccttt tg 22

<210> 47
<211> 22
<212> DNA
<213> Homo sapiens

<400> 47
attccacaca ttttcagctg ca 22

<210> 48
<211> 21
<212> DNA
<213> Homo sapiens

<400> 48
ggatggagaa ttccttttgg g 21

<210> 49
<211> 25
<212> PRT
<213> Homo sapiens

<400> 49

Cys Leu Thr Met Asn Arg Thr Asn Val Asn Val Phe Ser Glu Leu Ser
1 5 10 15

Ala Pro Arg Arg Asn Glu Asp Phe Val
20 25

<210> 50
<211> 18
<212> PRT
<213> Homo sapiens

<400> 50

Cys Met Leu Pro Asp Phe Asp Arg Arg Trp Asp Asp Thr Thr Leu Ser
1 5 10 15

Ser Ala

<210> 51
<211> 21
<212> PRT
<213> Homo sapiens

<400> 51

Cys Lys Pro Gln Leu Val Lys Lys Ser Tyr Gly Val Asn Glu Arg Ala
1 5 10 15

Tyr Ser Gln Glu Glu
20

<210> 52
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized Antisense Oligonucleotide.

<400> 52
uuccaguucc acggcacuuc augcuu 26

<210> 53
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized Antisense Oligonucleotide.

<400> 53
guccaguccg augaugaagg cgaagu 26

<210> 54
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized Antisense Oligonucleotide.

<400> 54
caguuguuau aaaggcggcc cucgcu 26

<210> 55
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized Antisense Oligonucleotide.

<400> 55
uuguagccau ucuggacccu agugcu 26

<210> 56
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized Antisense Oligonucleotide.

<400> 56
ucuuccagcc cgugaaggaa ccacau 26

<210> 57
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized Antisense Oligonucleotide.

<400> 57
accuugaccu uauccgcaca ggagau 26

<210> 58
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized Antisense Oligonucleotide.

<400> 58
gagccucccc gggaauauug uugacu 26

<210> 59
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized Antisense Oligonucleotide.

<400> 59

gcugauccca ggucuuaccg auguuu 26

<210> 60
<211> 25
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized Antisense Oligonucleotide.

<400> 60
acaccaagga agugcccgac cuucu 25

<210> 61
<211> 26
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized Antisense Oligonucleotide.

<400> 61
gacugaaacu ggcguccacc cuacuu 26

<210> 62
<211> 24
<212> DNA
<213> Homo sapiens

<400> 62
gaggatgagg agagctatga caca 24

<210> 63
<211> 22
<212> DNA
<213> Homo sapiens

<400> 63
ccctttgcac tcataacgtc ag 22

<210> 64
<211> 29
<212> DNA
<213> Homo sapiens

<400> 64
aaacacacag tcatcatagg gcagctcgt 29

<210> 65
<211> 41
<212> DNA

<213> Homo sapiens

<220>
<221> misc_feature
<222> (21)..(21)
<223> wherein "n" equals either C, or T.

<400> 65
ctgagcagtt gttataaagg nggccctcgc cggagggagg g 41

<210> 66
<211> 41
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (21)..(21)
<223> wherein "n" equals either T, or C.

<400> 66
gccccagcgc tctgggctcc nggcgcctca cttaccctag t 41

<210> 67
<211> 41
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (21)..(21)
<223> wherein "n" equals either G, or A.

<400> 67
gccaccgagg tcacaacccc ngctgtggcc accgtttcta g 41

<210> 68
<211> 41
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (21)..(21)
<223> wherein "n" equals either G, or A.

<400> 68
gtgctcccgt ccagtccgat natgaaggcg aaggtgaggc c 41

<210> 69
<211> 41
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (21)..(21)
<223> wherein "n" equals either G, or A.

<400> 69
cgtgtgggcc ctgtgctccc ntccagtccg atgatgaagg c 41

<210> 70
<211> 41
<212> DNA
<213> Homo sapiens

<220>
<221> misc_feature
<222> (21)..(21)
<223> wherein "n" equals either T, or C.

<400> 70
catcaagaag aggacgtagg ngagcaggag gacaaagtct t 41

<210> 71
<211> 39
<212> DNA
<213> Homo sapiens

<400> 71
tgtaaaacga cggccagtgt cagacggttt ttgggtcat 39

<210> 72
<211> 39
<212> DNA
<213> Homo sapiens

<400> 72
tgtaaaacga cggccagtgt cagacggttt ttgggtcat 39

<210> 73
<211> 39
<212> DNA
<213> Homo sapiens

<400> 73
tgtaaaacga cggccagtaa taccttctcc ccactccaa 39

<210> 74
<211> 39
<212> DNA
<213> Homo sapiens

<400> 74
tgtaaaacga cggccagtaa taccttctcc ccactccaa 39

<210> 75
<211> 39
<212> DNA
<213> Homo sapiens

<400> 75
tgtaaaacga cggccagtaa taccttctcc ccactccaa 39

<210> 76
<211> 39
<212> DNA
<213> Homo sapiens

<400> 76
tgtaaaacga cggccagtcc tttccctgtt ggtgattct 39

<210> 77
<211> 38
<212> DNA
<213> Homo sapiens

<400> 77
caggaaacag ctatgacccg ctctccccag acgattta 38

<210> 78
<211> 38
<212> DNA
<213> Homo sapiens

<400> 78
caggaaacag ctatgacccg ctctccccag acgattta 38

<210> 79
<211> 39
<212> DNA
<213> Homo sapiens

<400> 79
caggaaacag ctatgaccag atggaaaaga ggatcccaa 39

<210> 80
<211> 39
<212> DNA

<213> Homo sapiens

<400> 80
caggaaacag ctatgaccag atggaaaaga ggatcccaa 39

<210> 81
<211> 39
<212> DNA
<213> Homo sapiens

<400> 81
caggaaacag ctatgaccag atggaaaaga ggatcccaa 39

<210> 82
<211> 39
<212> DNA
<213> Homo sapiens

<400> 82
caggaaacag ctatgaccgc caaaactcgg gactaacat 39

<210> 83
<211> 18
<212> DNA
<213> Homo sapiens

<400> 83
tgtaaaacga cggccagt 18

<210> 84
<211> 18
<212> DNA
<213> Homo sapiens

<400> 84
caggaaacag ctatgacc 18

<210> 85
<211> 22
<212> DNA
<213> Homo sapiens

<400> 85
gcttcttcct ctttgggatc ct 22

<210> 86
<211> 23
<212> DNA
<213> Homo sapiens

<400> 86

cttggtcaga ctgacagcat gag 23

<210> 87
<211> 25
<212> DNA
<213> Homo sapiens

<400> 87
ttccatctgc ttctcctgcc tgctg 25

<210> 88
<211> 59
<212> PRT
<213> Homo sapiens

<400> 88

Asn Gln Gln Thr Ala Pro Val Arg Tyr Phe Leu Phe Gly Val Leu Phe
1 5 10 15

Ala Leu Cys Phe Ser Cys Leu Leu Ala His Ala Ser Asn Leu Val Lys
20 25 30

Leu Val Arg Gly Cys Val Ser Phe Ser Trp Thr Thr Ile Leu Cys Ile
35 40 45

Ala Ile Gly Cys Ser Leu Leu Gln Ile Ile Ile
50 55

<210> 89
<211> 59
<212> PRT
<213> Mus musculus

<400> 89

Asn His Gln Thr Ala Pro Val Arg Tyr Phe Leu Phe Gly Val Leu Phe
1 5 10 15

Ala Ile Cys Phe Ser Cys Leu Leu Ala His Ala Ser Asn Leu Val Lys
20 25 30

Leu Val Arg Gly Arg Val Ser Phe Cys Trp Thr Thr Ile Leu Phe Ile
35 40 45

Ala Ile Gly Val Ser Leu Leu Gln Thr Ile Ile
50 55

<210> 90
<211> 46
<212> PRT
<213> Homo sapiens

<400> 90

Arg Asp Ser Asp Gly Ala Glu Glu Asp Val Ala Leu Thr Ser Tyr Gly
1 5 10 15

Thr Pro Ile Gln Pro Gln Thr Val Asp Pro Thr Gln Glu Cys Phe Ile
20 25 30

Pro Gln Ala Lys Leu Ser Pro Gln Gln Asp Ala Gly Gly Val
35 40 45

<210> 91
<211> 15
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized Polypeptide.

<400> 91

Asp Gly Ser Thr Gly Pro Thr Arg Phe Phe Leu Phe Gly Ile Leu
1 5 10 15

<210> 92
<211> 16
<212> PRT
<213> Artificial Sequence

<220>
<223> Synthesized Polypeptide.

<400> 92

Thr Lys Gln Arg Asn Pro Met Asp Tyr Pro Val Glu Asp Ala Phe Cys
1 5 10 15

<210> 93
<211> 21
<212> DNA
<213> Homo sapiens

<400> 93
aaggtgcagg actccaacag g 21

<210> 94
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized Oligonucleotide.

<400> 94
ggugcaggac uccaacaggt t 21

<210> 95
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized Oligonucleotide.

<400> 95
ccuguuggag uccugcacct t 21

<210> 96
<211> 23
<212> DNA
<213> Homo sapiens

<400> 96
aattctccga acgtgtcacg ttt 23

<210> 97
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized Oligonucleotide.

<400> 97
uucuccgaac gugucacguu utt 23

<210> 98
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> Synthesized Oligonucleotide.

<400> 98
aaacgugaca cguucggagt t 21